



## Samoa: Renewable Energy Development and Power Sector Rehabilitation Project

Project Name	Renewable Energy Development and Power Sector Rehabilitation Project																				
Project Number	46044-002																				
Country	Samoa																				
Project Status	Active																				
Project Type / Modality of Assistance	Grant																				
Source of Funding / Amount	<table border="1"><tr><td colspan="2"><b>Grant 0370-SAM: Renewable Energy Project and Power Sector Rehabilitation Project</b></td></tr><tr><td>concessional ordinary capital resources lending / Asian Development Fund</td><td>US\$ 10.00 million</td></tr><tr><td colspan="2"><b>Grant 0371-SAM: Renewable Energy Development and Power Sector Rehabilitation Project</b></td></tr><tr><td>Clean Energy Fund under the Clean Energy Financing Partnership Facility</td><td>US\$ 1.00 million</td></tr><tr><td colspan="2"><b>Grant 0373-SAM: Renewable Energy Development and Power Sector Rehabilitation Project</b></td></tr><tr><td>concessional ordinary capital resources lending / Asian Development Fund</td><td>US\$ 8.21 million</td></tr><tr><td colspan="2"><b>Grant 0456-SAM: Renewable Energy Development and Power Sector Rehabilitation Project - Additional Financing</b></td></tr><tr><td>European Union</td><td>US\$ 5.06 million</td></tr><tr><td colspan="2"><b>Grant 0457-SAM: Renewable Energy Development and Power Sector Rehabilitation Project - Additional Financing</b></td></tr><tr><td>Government of New Zealand</td><td>US\$ 2.49 million</td></tr></table>	<b>Grant 0370-SAM: Renewable Energy Project and Power Sector Rehabilitation Project</b>		concessional ordinary capital resources lending / Asian Development Fund	US\$ 10.00 million	<b>Grant 0371-SAM: Renewable Energy Development and Power Sector Rehabilitation Project</b>		Clean Energy Fund under the Clean Energy Financing Partnership Facility	US\$ 1.00 million	<b>Grant 0373-SAM: Renewable Energy Development and Power Sector Rehabilitation Project</b>		concessional ordinary capital resources lending / Asian Development Fund	US\$ 8.21 million	<b>Grant 0456-SAM: Renewable Energy Development and Power Sector Rehabilitation Project - Additional Financing</b>		European Union	US\$ 5.06 million	<b>Grant 0457-SAM: Renewable Energy Development and Power Sector Rehabilitation Project - Additional Financing</b>		Government of New Zealand	US\$ 2.49 million
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Strategic Agendas	Environmentally sustainable growth Inclusive economic growth																				
Drivers of Change	Partnerships																				
Sector / Subsector	<b>Energy</b> - Renewable energy generation - small hydro																				
Gender Equity and Mainstreaming	Some gender elements																				
Description	The project will support the government's policy to increase power generation from renewable sources, rehabilitate damage to the power sector caused by a major cyclone, and increase the power sector's resilience to future natural disasters. It will rehabilitate three small hydropower plants (SHPs) on Upolu and construct three new SHPs on Upolu and Savai'i. The project will also provide training to the Electric Power Corporation (EPC) on operation and maintenance (O&M) of the SHPs for up to two years after plant commissioning. The project will result in greater energy security and sustainability for Samoa.																				

Project Rationale and Linkage to Country/Regional Strategy

Samoa is a Pacific island country divided into the two main islands of Upolu and Savai'i and two minor outer islands, with a total population of 188,000 people. About 70% of the population lives on Upolu, the main island and location of the capital, Apia. Around 95% of households have access to grid electricity, while the remaining 5% are connected to small diesel generators or solar systems in urban and rural areas. Samoa had a total installed grid-connected power capacity in 2012 of about 42 megawatts (MW), composed of 30 MW diesel generators, 11 MW hydropower plants, one MW biofuel power plant, and small distributed solar plants in the few kilowatt range. Samoa's electricity consumption is about 90 gigawatt-hours (GWh) per year.

Samoa is heavily reliant on imported fossil fuels. In 2012, total fuel imports amounted to about 95 million liters, or 10% of Samoa's total gross domestic product (GDP). This heavy reliance is reflected in Samoa's electricity generation matrix, in which 60.0% is generated from diesel, 38.9% hydropower, 1.0% biofuel (coconut oil), and 0.1% solar. For EPC, Samoa's sole power utility, imported fuel is by far the single largest expense item, representing 74% of total generation costs and 51% of overall costs. The new and rehabilitated hydropower capacity to be provided by the project will save about 3.6 million liters of diesel per year.

Samoa is also vulnerable to natural disasters and the potential effects of climate change. Cyclone Evan made landfall in Upolu on 13 December 2012, seriously damaging the island's power generation and distribution systems. Following the government's request for support from development partners for a post-disaster needs assessment, ADB and other organizations fielded a joint mission in January 2013. The post-disaster needs assessment, completed in March 2013, included an inventory of damage to the power distribution grid and three hydropower plants. The Recovery Framework that emerged from the assessment was approved by the cabinet of Samoa in March 2013, prioritizing rehabilitation of the hydropower plants and recognizing the need to increase resilience.

The power sector in Samoa is well governed and managed. Operating responsibilities for managing the sector are vested in EPC, a wholly government-owned corporation and the sole utility in the power sector, with the main objective of operating as a commercial business. The Electricity Act, 2010 provides the legal framework for regulating the electricity sector, including the establishment of the Office of the Electricity Regulator to set and monitor electricity tariffs. The reliance on imported fuel is reflected in EPC's high average electricity tariff, which as of June 2013 was \$0.41 per kilowatt-hour (kWh) (ST0.9877/kWh). Under the regulations, EPC can pass on fuel costs directly to consumers and charge an inflation-indexed non-fuel tariff. The tariff therefore consists of a base energy rate, or non-fuel component, of \$0.31/kWh; and a variable fuel surcharge component, currently \$0.10/kWh. The non-fuel component covers operational costs, overhead expenses, and depreciation of equipment.

Financing for the project will be partially through ADB's Disaster Response Facility (DRF). During the 10th replenishment of the Asian Development Fund (ADF XI), ADB and ADF donors agreed to pilot test the DRF in the ADF XI period, 2013\_2016. The DRF policy provides that, in the event of a natural disaster, an ADF-only country can access up to 100% of its annual performance-based allocation from the DRF to respond to disasters. The government has sought ADB's assistance in rehabilitating the hydropower plants damaged by Evan, and requested access to ADB's DRF, which is justified given the severity of the cyclone that caused damage and loss equivalent to 28% of GDP. This project will be the first for which ADB is providing assistance from the DRF.

The proposed project will support the government's efforts to reduce Samoa's reliance on imported fossil fuels for power generation by providing a secure, sustainable, and clean source of electricity. The project will construct, install, and rehabilitate SHPs with an overall capacity of 5.50 MW on Upolu and Savai'i. The proposed project will enhance EPC's O&M programs through a capacity building and knowledge transfer program to last up to 2 years after SHP commissioning. Technical designs will ensure climate and disaster resilience.

ADB has solid experience in the power sector in Samoa. In 2007, with ADB's support, the government prepared the Power Sector Expansion Project (PSEP). The PSEP is improving the quality, reliability, and cost-effectiveness of power supply by supporting EPC's investment plan to meet growing demand, improving the financial performance and operational efficiency of EPC, and establishing effective regulation of the power sector. The PSEP also developed feasibility studies for a number of SHPs, some of which are part of the proposed project.

The government's Strategy for the Development of Samoa, 2012- 2016; its Energy Sector Plan, 2013-2016; and EPC's corporate plan, 2013\_-2015 all emphasize developing indigenous and renewable energy resources as a high development priority to reduce the economy's risk exposure to foreign exchange fluctuations and fuel price increases. The project is in line with ADB's country operations business plan, 2014\_-2016 for Samoa, which makes energy a priority area of support and sets a primary goal of reducing the country's dependence on imported fossil fuels by generating power from its own renewable energy sources.

Impact	Increased energy security
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**Project Outcome**

Description of Outcome	Customers will have access to a higher share of electricity generated by hydropower
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Progress Toward Outcome

**Implementation Progress**

Description of Project Outputs	<ol style="list-style-type: none"> <li>1. EPC rehabilitates and reconnects to the grid 4.69 MW of hydropower capacity</li> <li>2. EPC builds and connects to the grid 0.81 MW of hydropower capacity</li> <li>3. O&amp;M knowledge transfer program completed</li> <li>4. Project implemented efficiently</li> </ol>
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Status of Implementation Progress (Outputs, Activities, and Issues)	Not yet due Not yet due Not yet completed The project owner's engineers were engaged and the contract with EA was signed on 23 July 2014. It consisted of one electromechanical specialist (project manager), one hydropower-civil specialist, one geological specialist, one procurement specialist, and one financial (power) specialist. Not yet completed Not yet completed Not yet due
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Geographical Location

## Safeguard Categories

Environment	B
Involuntary Resettlement	B
Indigenous Peoples	C

## Summary of Environmental and Social Aspects

Environmental Aspects	Environment (category B). Initial environmental examinations (IEEs) have been prepared for the new and rehabilitation SHP schemes in accordance with ADB's Safeguard Policy Statement (2009). The project has been classified as category B for environment following ADB's Safeguard Policy Statement. Environmental flows have been determined and no significant impacts are expected on the existing fish and aquatic resources or riparian habitats as a result of the project provided that the specified minimum environmental flows are released into the rivers at all times. The main potential environmental impacts will be created by the weirs and run-of-river schemes, upgrading of the access roads, and installation of short sections of cables for grid connection. Impacts may include land clearing, earthworks, dust, noise, vegetation clearance, materials sourcing and transportation, waste disposal and discharges, and effects associated with upgrading of access roads. The IEEs have been endorsed by EPC and posted on the ADB website.
Involuntary Resettlement	The project is not expected to involve physical displacement or relocation of people. The rehabilitation of existing SHPs will be undertaken in the existing land acquired in 1921 and 1929, and will not require additional land acquisition. Due diligence for existing facilities has been undertaken in accordance with the Safeguard Policy Statement, and its results, including measures for resolving historical concerns raised by local villagers in existing sites, are included in the resettlement plan. EPC, in coordination with relevant government agencies, will finalize and implement these measures during implementation. New SHPs are proposed to be developed in partnership with local communities, and a joint venture business model is under discussion at the cabinet. The land required for new SHPs is expected to be acquired through negotiation, with details to be finalized after the cabinet's decision on the business model. A draft resettlement plan has been developed based on available information, in anticipation of possible land acquisition in case the proposed joint venture business model does not materialize. The resettlement plan will be updated and finalized after the detailed design, including measures for further consultations and collection of detailed socioeconomic information. The resettlement plan has been endorsed by EPC and posted on the ADB website.
Indigenous Peoples	The majority of the population in the project area are Polynesian people of Samoa and not considered to be distinct from the mainstream society. The project is not expected to affect any distinct and vulnerable group of indigenous peoples as defined by the Safeguard Policy Statement, and does not require an indigenous peoples plan. The project outputs will be delivered in a culturally appropriate manner.

## Stakeholder Communication, Participation, and Consultation

During Project Design

During Project Implementation

## Business Opportunities

Consulting Services	The engineers will have expertise on implementation and supervision of small hydropower projects and will be engaged using the fixed budget selection method, which is considered justified because of the project's technical complexity. Procurement of consultancy services will be undertaken in accordance with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). Goods and works will be procured in accordance with ADB's Procurement Guidelines (2013, as amended from time to time).
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Procurement Procurement of goods, works, services and the consultancy component of the turnkey contractor will be conducted through a single turnkey contract. The turnkey contract will include final design and engineering, supply and installation of equipment, construction works and commissioning, and an O&M knowledge transfer program for at least 2 years after plant commissioning. The rationale is to cover 1 year of normal guarantee time of equipment and one additional year of the hydrology cycle for conducting any needed system upgrades. A procurement capacity assessment was completed, which indicates that Samoa's procurement regulations and procedures are comprehensive. Even though EPC has a functioning procurement unit, it would still benefit from the expertise of the turnkey contractor. ADB will review the project's procurement processes. The PMU is also responsible for the PSEP, which is still under implementation and thus has recent experience with ADB procurement policies.

## Responsible Staff

Responsible ADB Officer	Melei, Maria
Responsible ADB Department	Pacific Department
Responsible ADB Division	Pacific Subregional Office in Suva, Fiji
Executing Agencies	<i>Ministry of Finance V-TAGILIMA@TREASURY.GOV.WS Ministry of Finance Government of Samoa Private Bag, Apia, Samoa</i>

## Timetable

Concept Clearance	20 Dec 2012
Fact Finding	01 Jul 2013 to 12 Jul 2013
MRM	26 Jul 2013
Approval	15 Nov 2013
Last Review Mission	-
Last PDS Update	30 Sep 2016

## Grant 0370-SAM

Milestones					
Approval	Signing Date	Effectivity Date	Closing		
			Original	Revised	Actual
15 Nov 2013	31 Jan 2014	26 May 2014	30 Jun 2019	-	-

Financing Plan			Grant Utilization			
	Total (Amount in US\$ million)		Date	ADB	Others	Net Percentage
Project Cost	14.62		Cumulative Contract Awards			
ADB	10.00		15 Nov 2013	7.77	0.00	78%
Counterpart	4.62		Cumulative Disbursements			
Cofinancing	0.00		15 Nov 2013	1.04	0.00	10%

Status of Covenants						
Category	Sector	Safeguards	Social	Financial	Economic	Others
Rating	-	-	-	Satisfactory	-	-

## Grant 0371-SAM

Milestones					
Approval	Signing Date	Effectivity Date	Closing		
			Original	Revised	Actual
15 Nov 2013	31 Jan 2014	26 May 2014	30 Jun 2019	-	-

Financing Plan		Grant Utilization			
	Total (Amount in US\$ million)	Date	ADB	Others	Net Percentage
Project Cost	1.00	Cumulative Contract Awards			
ADB	0.00	15 Nov 2013	0.00	0.93	93%
Counterpart	0.00	Cumulative Disbursements			
Cofinancing	1.00	15 Nov 2013	0.00	0.79	79%

Status of Covenants						
Category	Sector	Safeguards	Social	Financial	Economic	Others
Rating	-	-	-	Satisfactory	-	-

### Grant 0373-SAM

Milestones					
Approval	Signing Date	Effectivity Date	Closing		
			Original	Revised	Actual
15 Nov 2013	31 Jan 2014	26 May 2014	30 Jun 2019	-	-

Financing Plan		Grant Utilization			
	Total (Amount in US\$ million)	Date	ADB	Others	Net Percentage
Project Cost	8.21	Cumulative Contract Awards			
ADB	8.21	15 Nov 2013	8.08	0.00	98%
Counterpart	0.00	Cumulative Disbursements			
Cofinancing	0.00	15 Nov 2013	6.76	0.00	82%

Status of Covenants						
Category	Sector	Safeguards	Social	Financial	Economic	Others
Rating	-	-	-	Satisfactory	-	-

### Grant 0456-SAM

Milestones					
Approval	Signing Date	Effectivity Date	Closing		
			Original	Revised	Actual
18 Nov 2015	03 Dec 2015	06 Jan 2016	30 Jun 2019	-	-

Financing Plan		Grant Utilization			
	Total (Amount in US\$ million)	Date	ADB	Others	Net Percentage
Project Cost	6.27	Cumulative Contract Awards			
ADB	0.00	18 Nov 2015	0.00	4.17	82%
Counterpart	1.21	Cumulative Disbursements			
Cofinancing	5.06	18 Nov 2015	0.00	0.83	16%

Status of Covenants						
Category	Sector	Safeguards	Social	Financial	Economic	Others
Rating	-	-	-	Satisfactory	-	-

### Grant 0457-SAM

Milestones					
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Approval	Signing Date	Effectivity Date	Closing		
			Original	Revised	Actual
18 Nov 2015	03 Dec 2015	06 Jan 2016	30 Jun 2019	-	-

Financing Plan		Grant Utilization			
	Total (Amount in US\$ million)	Date	ADB	Others	Net Percentage
Project Cost	2.49	Cumulative Contract Awards			
ADB	0.00	18 Nov 2015	0.00	2.42	97%
Counterpart	0.00	Cumulative Disbursements			
Cofinancing	2.49	18 Nov 2015	0.00	1.07	43%

Project Page <https://www.adb.org/projects/46044-002/main>

Request for Information <http://www.adb.org/forms/request-information-form?subject=46044-002>

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